PATENT ABSTRACTS OF JAPAN

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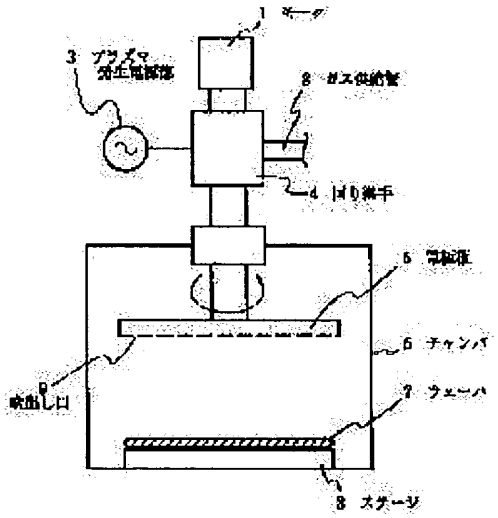
(54) VAPOR GROWTH DEVICE

(57)Abstract:

PURPOSE: To equalize time film thickness inside the surface by equipping it with a mechanism which rotates while jetting film growth gas to the electrode opposed to the electrode loaded with a wafer being a semiconductor substrate.

CONSTITUTION: An electrode plate 5 opposed to the wafer 7 on which to grow a film is rotated with a motor 1, and in this condition, plasma is generated. When gas is let flow from a gas supply pipe 2 in this condition, gas jets out of a gas blow port 9. Therefore, a film with a uniform thickness can be gotten inside the surface of the wafer, keeping the interval between the semiconductor substrate face and the electrode constant.



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* NOTICES *

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CLAIMS

[Claim(s)]
[Claim 1] Vapor growth equipment characterized by having the swivel joint which is connected to the rolling mechanism turning around the electrode plate which counters the electrode carrying a semi-conductor substrate, and this rolling mechanism, and supplies the gas for growth.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] This invention relates to the vapor growth equipment which forms an insulator layer etc. to a semi-conductor substrate side.
[0002]
[Description of the Prior Art] The former and this kind of vapor growth equipment impressed high-frequency voltage to the stage which is one of the electrodes while laying the wafer which is a semi-conductor substrate, although not shown in a drawing, the electrode plate on which reactant gas is sprayed while countering a wafer and being arranged, the chamber which contains the stage in which this electrode plate and wafer are laid, and the electrode plate, and had the plasma generating power supply section for reactant gas.
[0003] Drawing 2 (a) and (b) are the sectional views of the formed wafer. Conventionally, this vapor growth equipment introduced growth gas in the chamber, plasma-ized this gas, and had formed membranes to the wafer which is a semi-conductor substrate. And as shown in drawing 2 (b), the membrane formation 10 uniform to the field of a wafer 7 was obtained.
[0004]
[Problem(s) to be Solved by the Invention] Since the electrode plate is being fixed to the wafer with conventional vapor growth equipment, the thickness of membrane formation may become however, less uniform, as the abnormalities in the degree of **** of an electrode plate, a gap of spacing with a wafer, etc. often show to drawing 2 (a).
[0005] The purpose of this invention is proposing the vapor growth equipment with which membrane formation of homogeneous membrane thickness is obtained in a wafer side this problem's being solved.
[0006]
[Means for Solving the Problem] The vapor growth equipment of this invention is connected to the rolling mechanism turning around the electrode plate which counters the electrode carrying a semi-conductor substrate, and this rolling mechanism, and it has the swivel joint which supplies the gas for growth.
[0007]
[Example] Next, this invention is explained with reference to a drawing.
[0008] Drawing 1 is the type section Fig. of the vapor growth equipment in which one example of this invention is shown. This vapor growth equipment is having formed the motor 1 turning around electrode plate 5a, and the swivel joint 4 which connects an end with a gas supply line 2, and is connected to gas supply opening which leads the other end to the diffuser of the electrode plate 5, as shown in drawing 1 . It is the same as the former except it.
[0009] If gas is passed from a gas supply line 2, the electrode plate 5 being rotated by the motor and generating the plasma in this condition first, in order to form membrane formation in a wafer with this vapor growth equipment, gas will spout from the gas exit cone 9. Membrane formation is formed in a wafer of this.

[0010] Thus, the fitness of uniform ** can be formed by rotating the electrode plate 5.
[0011]
[Effect of the Invention] As explained above, when this invention is equipped with the device rotated while the electrode which counters the electrode carrying the wafer which is a semi-conductor substrate blows off membrane formation gas, spacing of a semi-conductor substrate side and an electrode can be kept constant, and it is effective in the vapor growth equipment which the thickness within a field can form to homogeneity being obtained.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the type section Fig. of the vapor growth equipment in which one example of this invention is shown.
[Drawing 2] It is the sectional view of the formed wafer.
[Description of Notations]
1 Motor
2 Gas Supply Line
3 Plasma Generating Power Supply Section
4 Swivel Joint
5 Electrode Plate
6 Camber
7 Wafer
8 Stage
9 Exit Cone

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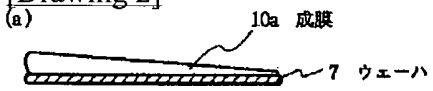
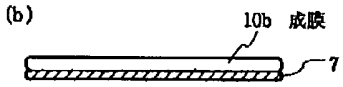
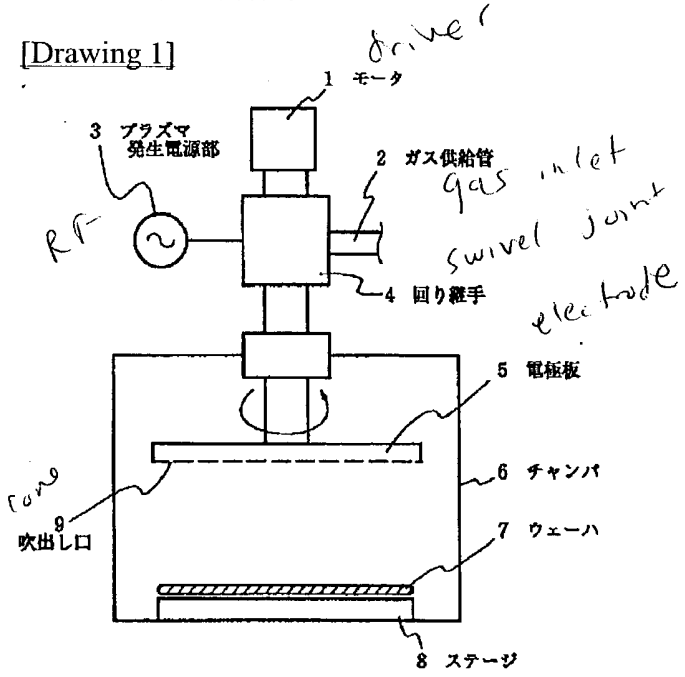
DRAWINGS

[Drawing 2]





[Drawing 1]



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